PATENT

IN THE SPECIFICATION:

Please replace the existing title with the following title:

--ANTIBODIES TO HUMAN ION CHANNELS--

RECEIVED

Please replace the table beginning on page 84, line 25 and ending on page 102 AUG 0.4 2003 with the following table:

TECH-GENTER-1600/2900-

Table 5

The following DNA sequence Ion31 < SEQ ID NO: 1> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NOS. 52> is a predicted amino acid sequence derived from the DNA sequence of $\frac{\text{SEQ}}{\text{ID}} = \frac{\text{NO}}{\text{NO}} = \frac{\text{NO}}{\text{N$

<SEQ ID NO: 52>

VAIRRRPSLYIINLLVPSSFLVAIDALSFYLPAESENRAPFKITLLLGYNVFLLMMNDLL

The following DNA sequence Ion32 < SEQ-ID NO: SEQ ID NO: 2> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 53> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 2:

<SEQ ID NO: 53>

SAPWLSWGILLILGEGSHAPTSFYSR

The following DNA sequence Ion33 < SEQ ID NO: 3> was identified in H. sapiens:

 ${\tt TATACTATACATAAAACAATTAGAGAACAACTAAGTGCTAAATTAAGTTTTCTGGCAATGGTTTCTGA}\\ {\tt TTATATATTTGTTTGATTTTTAAGGTATACATGCATGTAGTTTCAGAGTTAGAAGGCAAAGTAGTTCT}\\$

PATENT

The following amino acid sequence <SEQ ID NO: 54> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 3:

<SEQ ID NO: 54>

RTVPPYLYNTDVWFFFIRHYPW

The following DNA sequence Ion34 < SEQ ID NO: 4> was identified in H. sapiens:

The following amino acid sequence <SEQ_ID_NO. SEQ_ID_NO: 55> is a predicted amino acid sequence derived from the DNA sequence of SEQ_ID_NO. SEQ_ID_NO: 4:

<SEQ ID NO: 55>

GGRRGSSLPQNPTGGPSSFCGHCISLYILPPQR

The following DNA sequence Ion35 < SEQ ID NO: 5> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 56> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 5:

<SEQ ID NO: 56>

LLLLGNSHYVYDGLSYSVFPIFFHIFHFLYWSPFS

The following DNA sequence Ion36 < SEQ ID NO: SEQ ID NO: 6> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 57> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 6:

<SEQ ID NO: 57>
GDCRMAHAEQKLMDDLLNKTCYNNLDPPSHQLLTAHL

The following DNA sequence Ion37 < SEQ ID NO. SEQ ID NO: 7> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 58> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 7:

<SEQ ID NO:58 >
DERNQVLTLYLWIRQEWTDAYLRWDPNAYGGLDAIRIPSSLVWRPDIVLYNK

The following DNA sequence Ion38 < SEQ ID NO: 8> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 59> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 8:

<SEQ ID NO: 59> HFVALFSQDWKFVLQILYKLCLFFVLI

The following DNA sequence Ion39 <SEQ ID NO: 9> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 60> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 9:

<SEQ ID NO: 60>
LMQVWDNPFINWNPKECVGINKLTVLAENLWLPDIFIVES

The following DNA sequence Ion40 < SEQ ID NO: 10> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 61> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 10:

<SEQ ID NO: 61>
REPNSFFHNGINSTHNTGWPNHLLKVSYLNTFTMTIK

The following DNA sequence Ion41 < SEQ ID NO: 11> was identified in H. sapiens:



PATENT

The following amino acid sequence <SEQ ID NO: 62> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 11:

<SEQ ID NO: 62>

TLIECSMLNLVNLVLNRHDVLARSIFFQTTVWTSITSEKGELPLVASVTQKD

The following DNA sequence Ion56 <SEQ ID NO: 12> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NOS. 63> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 12:

<SEQ ID NO: 63>

CISDLGIFHYSYQLSISNPENPKHSNEHFLVSHWYSKNFRFW

The following DNA sequence Ion57 < SEQ ID NO: 13> was identified in H. sapiens:

GACCATTTAGGTGGCTATGGTCATAATCATGAAAGCTTGGACACAGTGGTGGTGGTGCAGGTGATGAG
GTTTGGAGCAAAGGATGACGTGATCTGACTGAGGCTTAATAGGATCATTCTGGTTTCTGGGGATGAGA
AAGTAAAATTTGTAGATATTTTGAAGCATTTTCTGTTGGCCTGAATGGCAGGAGTATGTGTGGAAAAG
GAAGAAGGAATCCATAGACTTGCTATTTGAGTTTAGAAAAGGTTTTTGGCCTCATCAAGGTATACTCGG
TCACTGGGCGTGTGAAAAAAGATGGCCGAGGGAGAATTCCTAGAAGGGGAAAATAGGGAGGAGACA
TGGGAGGATAACAGACTCCTAAATACATGTGGTTGAGTTCATTGGTTGTGCATATGGAAATTACCCCT
ACCTCAAACCATCACACAAATGATGAATTTAAGATATCAG

The following amino acid sequence <SEQ ID NO: 64> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 13:

<SEQ ID NO: 64>

 ${\tt SSHVLPPYFPLLGILPRPSFFTRPVTEYTLMRPKPFLNSNSKSMDSFFLFHTYSCHS}$

The following DNA sequence Ion58 <SEQ ID NO: SEQ ID NO: 14> was identified in H. sapiens:

ACTCCTGAAATCCTAGCCCGGACCCTGAGCCATTCAACTCAAGCAGCCCCTGAGACTAACATAGGGAG CTGCCTGGAGACTTCCCACAGTATTCATTCTGAGAGGAAGCTCACACAGGGTCCTAGACAGCTCCTAA ATCCTAAGCAGCTACAGGAAGGCACCATTTTGAGAACACAGCCCCTATCATACTGTATTCTGCTGGAG GGCCCAATAGCCCCTGTATCTTCACATCCCTGGAGCCCCATTGACATTCTCCACCTTTATTCACCACC



The following amino acid sequence <SEQ ID NO: 65> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 14:

<SEQ ID NO: 65>

PETNIGSCLETSHSIHSERKLTQGPRQLLNPKQLQEGTILRTQPLSYCILLEGPIAPVSSHPWSPIDILHL YSPPQLALLPRPKCKPLSVTQLPPVA

The following DNA sequence Ion59 <SEQ ID NO: SEQ ID NO: 15> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 66> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 15:

<SEQ ID NO: 66> PARRSERVYECCKEPYPDVTF

The following DNA sequence Ion60 < SEQ ID NO: 16> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 67> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 16:

<SEQ ID NO: 67>

NAPAITRSSCRVDVAAFPFDAQHCGLTFGSWTHGGHQLDVRPRGAAASLADFVENV EWRVLGMPARRRVLTYGCCSEPYPDVTFT

The following DNA sequence Ion61 <SEQ ID NO: 17> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 68> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 17:

<SEQ ID NO: 68>
SLSLAGKYYMATMTMVTFSTALTILIMNLHYCGPSVRPVPAW

The following DNA sequence Ion62 <SEQ ID-NO. SEQ ID NO: 18> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 69> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 18:

<SEQ ID NO: 69>
GRLALKLFRDLFANYTSALRPVADTDQTLNVTLEVTLSQIIDM

The following DNA sequence Ion63 <SEQ ID NO: 19> was identified in H. sapiens:



The following amino acid sequence <SEQ ID NO: 70> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 19:

<SEQ ID NO: 70>
AEGRLALKLFRDLFANYTSALRPVADTDQTL

The following DNA sequence Ion64 < SEQ ID NO: 20> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 71> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 20:

<SEQ ID NO: 71>
QSHPFLYFSICLIKQSSFVPLSICHPSVLPSFFPQTSFYIPAS

The following DNA sequence Ion65 < SEQ ID NO: 21> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 72> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 21:

<SEQ ID NO: 72>
HYVYLYCCANVTTIHLHNFFHLPKLKLPIYTITPVSPCPOLLATTMLPCVSMNLATLSTYKNHTVFVLL

The following DNA sequence Ion66 < SEQ ID NO: SEQ ID NO: 22> was identified in H. sapiens:

Cons

The following amino acid sequence <SEQ ID NOS. 73> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 22:

<SEQ ID NO: 73>
FSHILNAYWNMYNYIWNVDAYTSVFLFFLEEKVYFPPLICVN

The following DNA sequence Ion67 < SEQ ID NO: 23> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 74> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 23:

<SEQ ID NO: 74>
ETNYSYVVSSLPSIFFINSVIIPCLLFFFSEFRVIISRIFSLP

The following DNA sequence Ion68 < SEQ ID NO: 24> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 75> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 24:

<SEQ ID NO: 75>



FFEFGEWVLETVKGRKYLFYCC

The following DNA sequence Ion69 < SEQ ID NO: 25> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 76> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 25:

<SEQ ID NO: 76>
EKLSAPPRVAKRGSGGAGIGCATVSFFGQTEHAAPNDSAIFLPFPEPRAVQPVASFPD

The following DNA sequence Ion70 < SEQ ID NO: 26> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 77> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 26:

<SEQ ID NO: 77>
WQISLLHYCSFPLRGLYTYSAFPCDWQHCTVGGSVTFHFSDIGLVHVICFGQWNVRDT

The following DNA sequence Ion71 < SEQ ID NO: 27> was identified in H. sapiens:

TATGGAATGAATGAATGCATTGAAAGCCTACTTACCTAAAATCTCCTATATATTCAAATGATTA ATCAAAGATCTTTCATTCAACAAAATGAACTGAGTGCATTTAGAAGGCATTGTGGGGTGAAGGAGATG TGGCCCCTTCCTCTGGAGCTTAGAGTCTGTCTCCACCATTGAATCTGAAAAGCTAGCCAAATACAT GAGTAAAAAAAATTAAAATCCAAATCTTTTACCAATATAACATCGGATGACATGGCTGAATGATCAAA

Const

The following amino acid sequence <SEQ ID NO: 78> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 27:

<SEQ ID NO: 78>
WICSEILYKCVFKAEFLGFDWLGCVICFMSMSYSTNK

The following DNA sequence Ion72 <SEQ ID NO: SEQ ID NO: 28> was identified in *H. sapiens*:

CTCTCTTATGCTCCAGCAAAATAACTTCAGTGACTTTATCAGAAATGGGGTTTTAGACAGGATGTT
TCTTTGGTTAGATTTGGTATCATGTGTCTTAGGTATTTATATCTTTATCCCTTAACCATACACATACT
TTACTTGGGGTAACCTTAGTAAATAAGATCTTCAATTAAGCTTAGAACTTTGTAGGATATTAGAAAGC
CAGAGTCCATATCTGTTTGTGGGGACAACTCAGACATCCCATCTTCCATTGACTATATTTTTTGAGTGA
CTTTTTCGTAATTAGACTCTCTACCTTCAAATTCAGCTTCTGTGGGATCATTGATTAAA

The following amino acid sequence <SEQ ID NO: 79> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 28:

<SEQ ID NO: 79> VLDRMFLWLDLVSCVLGIYIFIP

The following DNA sequence Ion73 < SEQ ID NO: 29> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 80> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 29:

<SEQ ID NO: 80>
GDCRMAHAEOKLMDDLLNKTRYNNLICPATSSSQLISIETELSLAQCISVVSAE

The following DNA sequence Ion74 < SEQ ID NO: 30> was identified in H. sapiens:

Clary

The following amino acid sequence <SEQ ID NO: 81> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 30:

<SEQ ID NO: 81>
GDCRMAHAEQKLMDDLLNKTCYNNLIRPATSSSQLISIQTALSLAQCISV

The following DNA sequence Ion75 <SEQ ID NO: 31> was identified in H. sapiens:

CTGTGAGGAGCTGGTGGCTGGGCGGATCAGGTTGTTGTAACAGGTTTTGTTCAGGAAGTCGTCCATCA GTTTCTGCTCGGCATGGGCCATGCGGCAGTCCCCTGGGTAAACACACAGACATGCTGGGCCCTTGTGC AGCTGTCTCCCCACTGCAGCTTGACAGCTATGAAAGCAGGAGCTGAGAGGGCCAGGGAGCACA

The following amino acid sequence <SEQ ID NO: 82> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 31:

<SEQ ID NO: 82>
GDCRMAHAEQKLMDDFLNKTCYNNLIRPATSSSQ

The following DNA sequence Ion76 <SEQ ID NO. SEQ ID NO: 32> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NOS. 83> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 32:

<SEQ ID NO: 83>

AEQKLMDDLLNKTRYHNLIPPSRQLLTAHL

The following DNA sequence Ion77 < SEQ ID NO: 33> was

identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 84> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 33:

<SEQ ID NO: 84>
GDCRMAHAEQKLMDDLLN

The following DNA sequence Ion78 < SEQ ID NO: 34> was identified in H. sapiens:

The following amino acid sequence <SEQ-ID-NO: SEQ ID NO: 85> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 34:

<SEQ ID NO: 85>
NLVFPKVYLLFFOMAAFFLCPHMGFSLCICILCLCPNFLFKIM

The following DNA sequence Ion79 < SEQ ID NO: 35> was identified in H. sapiens:

The following amino acid sequence <<u>SEQ ID NO:</u> SEQ ID NO: 86> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: SEQ ID NO: 35:

<SEO ID NO: 86>

EFTWLRRNDSVHGLETLWLAYTIQWYFTLDTRLQQETGN

The following DNA sequence Ion80 < SEQ ID NO: 36> was identified in H. sapiens:

ATTGCCTGCTCTGGAAGCATGCAAAGTGGACCAAATTCAGTCCAAAGGTCTGGAGTAAATTTAGCTC
TGCCACTTACTTGCCTTGTGACCTTGGACAATGATCATCTATAAAGGAGTGATGAGAAATAGTACTAC
TTCTTTGTTATATGTTGTGTGTGTGTGTTTTTGCGTGTGCGCGCATGTTGTGGGTGCGCGTATTTAAAAA
GCTAAGAAATGCAAAAGGGTCAAAAGCGCTAAGCCTGGGCTCAAGAGGTGCTCAGGGAAAGCTGATTG
TCAGTCAAAAAGTCAAACCTGCACGTTTCCTACCACCACTTGCTGGTAGCGGTAGCGGGCAATGACTC
TTCGGGGTCTCCTGTGTCGCCTAGGCTGGCCCGAGGTCCTCGACTGTAGAAAAGATAGTTGATGTAG
ACATACTCCAGCAAGGACAGGAACACAAAGAACAAGCACACGAGGATATAGATATCAATGGCCTTGAT
ACAGGAAATGTTGGGGAGCTTATCCCGCAGATGTGAGTCGATGGTCAGGATGAGCATTGAAGTTA
AGCCTGTAAGCAACACAGTACAGACTTAGTCTCCTCTGATGGCTAACGTTCTTGGCAACCT

The following amino acid sequence <SEQ ID NO: 87> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 36:

<SEQ ID NO: 87>

GLTSMLILTTIDSHLRDKLPNISCIKAIDIYIXXXXXXXXXXLEYVYINYLFY

The following DNA sequence Ion81 < SEQ ID NO: SEQ ID NO: 37> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 88> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 37:

<SEO ID NO: 88>

LSFISETKQKPLNGWFLNILPQTFPLTCIRIHFGGPPLCLGM

The following DNA sequence Ion82 <SEQ ID NO. SEQ ID NO: 38> was identified in H. sapiens:



The following amino acid sequence <SEQ ID NO: 89> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 38:

<SEQ ID NO: 89>

LFLFVSFLFLQPLMEYGTLHYFTSNQKGKTATKDRKLKNKASV

The following DNA sequence Ion83 <SEQ ID NO. SEQ ID NO: 39> was identified in H. sapiens:

The following amino acid sequence <SEQ_ID_NO: SEQ_ID_NO: 90> is a predicted amino acid sequence derived from the DNA sequence of SEQ_ID_NO: SEQ_ID_NO: 39:

<SEQ ID NO: 90>

LASWPPVDHFCRQDSQKGNHSLNFYRIIFYLKRHVHKWQDAQHTSFYCVSLYCTSQILHFLTNGRFLATLC QANLSVPFVQQHALPSCLWVTFW

The following DNA sequence Ion84 <SEQ ID NO. SEQ ID NO: 40> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 91> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 40:

<SEQ ID NO: 91>

 ${\tt RVDQDGHVKLNLALTTETNCNFELLHFPRDHSNCSLSFYALSNT}$



The following DNA sequence Ion85 < SEQ ID NO: SEQ ID NO: 41> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 92> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 41:

<SEQ ID NO: 92>

RVDQDGHVKLNLALTTETNCNFELLHFPRDHSNCSLSFYALSNT

The following DNA sequence Ion86 < SEQ ID NO: 42> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NOS. 93> is a predicted amino acid sequence derived from the DNA sequence of <a href="#sequence-

<SEQ ID NO: 93>
LEFSPIFYCLRLSSFLWLAYRLSPQPGYLDFLEFSPIFYFLSLSCFLWLAYRLSPQPGY

The following DNA sequence Ion87 < SEQ ID NO: 43> was identified in H. sapiens:



ATACTGTTGAAATAG

The following amino acid sequence <SEQ ID NO: 94> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 43:

<SEQ ID NO: 94>

FNFPPFNLVCFTPHCLLRIDVCTQLFLWTQPTLSLHIL

The following DNA sequence Ion88 < SEQ ID NO: 44> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 95> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 44:

<SEQ ID NO: 95>

ASRRCNIVAMCPESVPSGGFLVSLTSRMKPWTLTVSVAVLKDGVSG

The following DNA sequence Ion89 < SEQ ID NO: 45> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 96> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 45:

<SEQ ID NO: 96>

GAILTNETWEKLAGELVGYFPFALKGAKERYIPFFFPFSSLDV

The following DNA sequence Ion90 < SEQ ID NO: 46> was identified in H. sapiens:



The following amino acid sequence <SEQ ID NO: 97> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 46:

<SEQ ID NO: 97>

 $\label{thm:constraint} KRECHQRRPKEQILTLQEKLWARQKEKDQLFLQLKKVSMRKKNGGERSRATPSDIRCEPAEPDYSRGDSLP\\ PRHAGSAGGHDRPGIVIAADPAKQMFRPHVLTTRKSVGSAAAFAGTPEQAAWAVPLGLLSPYLNMGPHSPM\\ ALVGSSEQFSAPWGAFMSQPQP\\ \\$

The following DNA sequence Ion91 <SEQ ID NO. SEQ ID NO: 47> was identified in H. sapiens:

The following amino acid sequence < SEQ ID NO: 98> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 47:

<SEQ ID NO: 98>

 ${\tt GSAGGHDRPGIVIAADPAKQMFRPHVLTTRKSVGSAAAFAGTPEQAAWAVPLGLLSPYLNMGPHSPMALVGSSEQFSAPWGAFMSQPQPYVLLGHFQHTQTGFL}$

The following DNA sequence Ion92 <SEQ ID NO. SEQ ID NO: 48> was identified in H. sapiens:



The following amino acid sequence <SEQ ID NO: 99> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 48:

<SEQ ID NO: 99>

CIEAPFHLHTRVCISFLPSFIHYLLIIFVYLFSFLLGPARLVFCLCALVTSASQIAGTTGDL

The following DNA sequence Ion93 < SEQ ID NO: SEQ ID NO: 49> was identified in H. sapiens:

The following amino acid sequence < SEQ ID NO: 100> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 49:

<SEQ ID NO: 100>

 ${\tt QEEDIIQESRFYFRGYGLGHCLQARDGGPMEGSGIYSPQPPAPLLREGETTRKLYVDAKRIDTISRAVFPFTLIFNIFYWVVYKVLRSEDIHQ}$

The following DNA sequence Ion94 < SEQ ID NO: 50> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 101> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 50:

<SEQ ID NO: 101> ENRCHTVCNSKSDLDVOSSGSFPKAFHVWLPSCSGNTSQVDGG

The following DNA sequence Ion95 < SEQ ID NO: 51> was identified in H. sapiens:

TAAGGAGATTAAAAGTGACAGCATTTTTCTTGTTGAATTAATGATGGGTTTTTACATTTTCACTTTTC
AAAAAATATAATCACCACTGTGTTTTTGCAGAAACAATAGTATGATAAAATCAAGGAGAAATACAACTA
GAGAAGAGGCAAAAAAATCTCAATATTATGATTATAA

The following amino acid sequence <SEQ ID NO: 102> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 51:

<SEO ID NO: 102>

AIKPSLGVWSVSEVYSHCKWILTVMVNTPGQRMGHAHSYWKDLEHFPVNCILFGFISLTEWTFFYMLPNLP

The following DNA sequence Ion31d6 < SEQ ID NO: 103> was identified in H. sapiens:

The following amino acid sequence <SEQ_ID_NO: 105> is a predicted amino acid sequence derived from the DNA sequence of SEQ_ID_NO: 103:

<SEO ID NO: 105>

GIPGMVTNISVPTQVNISFAMSAILDVNEQLHLLSSFLWLEMVWDNPFISWNPEECEGITKMSMAAKNLWL PDIFIIELMDVDKTPKGLTAYVSNEGRIRYKKPMKVDSICNLDIFYFPFDQQNCTLTFSSFLYTVDSMLLD MEKEVWEITDASRNILQTHGEWELLGLSKATAKLSRGGNLYDQIVFYVAIRRRPSLYVINLLVPSGFLVAI DALSFYLPVKSGNRVPFKITLLLGYNVFLLMMSDLLPTSGTPLIGVYFALCLSLMVGSLLETIFITHLLHV ATTQPPPLPRWLHSLLLHCNSPGRCCPTAPQKENKGPGLTPTHLPGEV

The following DNA sequence Ion31c4 < SEQ ID NO. SEQ ID NO: 104> was identified in H. sapiens:



CCGCAAAGTTGTCCAGGGGAGGCAACCTGTATGATCAGATCGTGTTCTATGTGGCCATCAGGCGCAGGCCC AGCCTCTATGTCATAAACCTTCTCGTGCCCAGTGGCTTTCTGGTTGCCATCGATGCCCTCAGCTTCTACCT GCCAGTGAAAAGTGGGAATCGTGTCCCATTCAAGATAACGCTCCTGCTGGGCTACAACGTCTTCCTGCTCA TGATGAGTGACTTGCTCCCCACCAGTGGCACCCCCTCATCGGTGTCTACTTCGCCCTGTGCCTGTCCCTG CCTGCCTCGGTGGCTCCACTCCTGCTGCTCCACTGCAACAGCCCGGGGAGATGCTGTCCCACTGCGCCCC AGAAGGAAAATAAGGGCCCGGGTCTCACCCCCACCTGCCCGGTGTGAAGGAGCCAGAGGTATCAGCA GGGCAGATGCCGGGCCCTGCGGAGGCAGAGCTGACAGGGGGCTCAGAATGGACAAGGGCCCAGCGGAACA $\tt CGAGGCCCAGAAGCAGCACTCAGTGGAGCTGTGGTTGCAGTTCAGCCACGCGATGGACGCCATGCTCTTCC$ $\texttt{GCCTCTACCTGCTCTTCATGGCCTCCTCTATCATCACCGTCATATGCCTCTGGAACACCT{\textbf{A}\textbf{G}}{\texttt{GCAGGTGCT}}$ CACCTGCCAACTTCAGTCTGGAGCTTCTCTTGCCTCCAGGGACTGGCCAGGTCTCCCCCCCTTTCCTGAGTA CCAACTATCATATCCCCAAAGATGACTGAGTCTCTGCTGTATTCCATGTATCCCAATCCGGTCCTGCTGAT CTCT

The following amino acid sequence <SEQ ID NO: SEQ ID NO: 106> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 104:

<SEQ ID NO: 104>

GTGPEFPGSRPALGPLSYREHRVALLHLTHSMSTTGRGVTFTINCSGFGQHGADPTALNSVFNRKPFRPVT
NISVPTQVNISFAMSAILDVNEQLHLLSSFLWLEMVWDNPFISWNPEECEGITKMSMAAKNLWLPDIFIIE
LMDVDKTPKGLTAYVSNEGRIRYKKPMKVDSICNLDIFYFPFDQQNCTLTFSSFLYTVDSMLLDMEKEVWE
ITDASRNILQTHGEWELLGLSKATAKLSRGGNLYDQIVFYVAIRRRPSLYVINLLVPSGFLVAIDALSFYL
PVKSGNRVPFKITLLLGYNVFLLMMSDLLPTSGTPLIGVYFALCLSLMVGSLLETIFITHLLHVATTQPPP
LPRWLHSLLLHCNSPGRCCPTAPQKENKGPGLTPTHLPGVKEPEVSAGQMPGPAEAELTGGSEWTRAQREH
EAQKQHSVELWLQFSHAMDAMLFRLYLLFMASSIITVICLWNTAGAHLPTSVWSFSCLQGLARSPPFPEYQ
LSYPQRLSLCCIPCIPIRSCSIPIPDISPCSCILLASFSPTIWFVPLTSSAQTIPLLPADLPNKFCREKKK
KKKKKKKKKKKKKKKRAAA

The following DNA sequence Ion52 <SEQ ID NO. SEQ ID NO: 107> was identified in H. sapiens:

The following amino acid sequence <SEQ ID NO: 109> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO: 107

<SEQ ID NO: 109>

CLSLMVGSLLETIFITHLLHVATTQPPPLPRWLHSLLL

The following DNA sequence Ion 111<SEQ ID NO. SEQ ID NO: 108> was identified in *H. sapiens*:



The following amino acid sequence <SEQ ID NO: 110> is a predicted amino acid sequence derived from the DNA sequence of SEQ ID NO:108:

<SEQ ID NO: 110>

LSSSMDVDKTPKGLTAYVSNEGRIRYKKPMKGDSICNLDIFYFPFDQQNCTLTFSSFLYT

Please replace the paragraph beginning on page 102, line 3 and ending on page 103, line 3 with the following:

-- A brief description of the searching mechanism follows. The BLAST algorithm, Basic Local Alignment Search Tool, is suitable for determining sequence similarity (Altschul *et al.*, *J. Mol. Biol.*, **1990**, *215*, 403-410, which is incorporated herein by reference in its entirety). Software for performing BLAST analyses is publicly available through the National Center for Biotechnology Information (http://www.nebi.nlm.nih.gov/www.ncbi.nlm.nih.gov/

Please replace the paragraph on page 24, lines 5-17 with the following paragraph:

-- Another aspect of the present invention is directed to vectors, or recombinant expression vectors, comprising any of the nucleic acid molecules described above. Vectors are used herein either to amplify DNA or RNA encoding ion-x and/or to express DNA which encodes ion-x. Preferred vectors include, but are not limited to, plasmids, phages, cosmids, episomes, viral particles or viruses, and integratable DNA fragments (*i.e.*, fragments integratable into the host genome by homologous recombination). Preferred viral particles include, but are not limited to, adenoviruses, baculoviruses, parvoviruses, herpesviruses, poxviruses, adeno-associated viruses, Semliki Forest viruses,







PATENT

vaccinia viruses, and retroviruses. Preferred expression vectors include, but are not limited to, pcDNA3TM vectors (Invitrogen) and pSVLTM vectors (Pharmacia Biotech). Other expression vectors include, but are not limited to, pSPORTTM vectors, pGEMTM vectors (Promega), pPROEXvectorsTM (LTI, Bethesda, MD), BluescriptTM vectors (Stratagene), pQETM vectors (Qiagen), pSE420TM vectors (Invitrogen), and pYES2TM vectors (Invitrogen).

